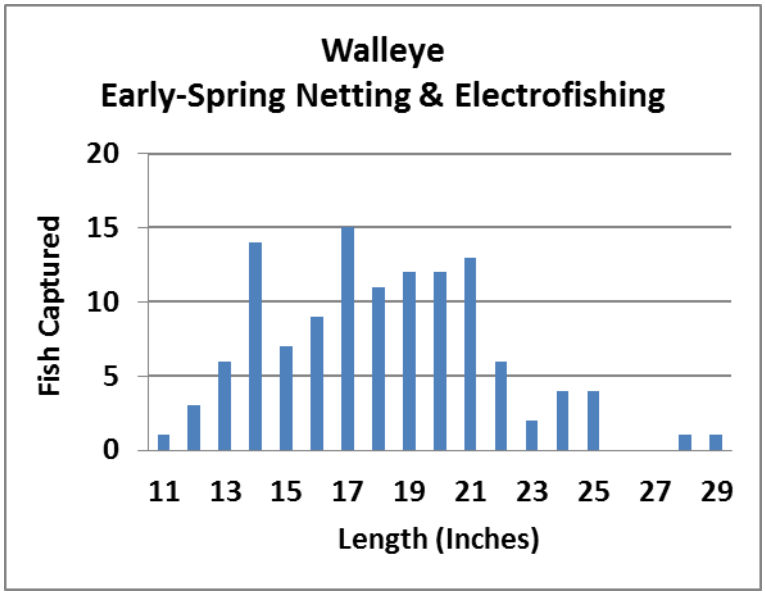
Summary of Fishery Surveys
Cedar Lake, Iron County, 2013

The Mercer DNR Fisheries Management Team conducted the following fishery surveys on Cedar Lake in 2013: early-spring fyke netting (May 8 – May 11) and electrofishing (May 11), late-spring electrofishing (May 21), and an early-summer angling survey (June 18). Walleye were the primary species targeted during the early-spring surveys, however, samples of the muskellunge, northern pike, black crappie, and yellow perch populations were also obtained. Bass and bluegill populations were targeted for assessment during the late-spring electrofishing survey, and the early summer angling survey provided supplemental information about bass populations. Quality, preferred, and memorable sizes referenced in this summary are based on standard proportions of world record lengths developed for each species by the American Fisheries Society.

Walleye

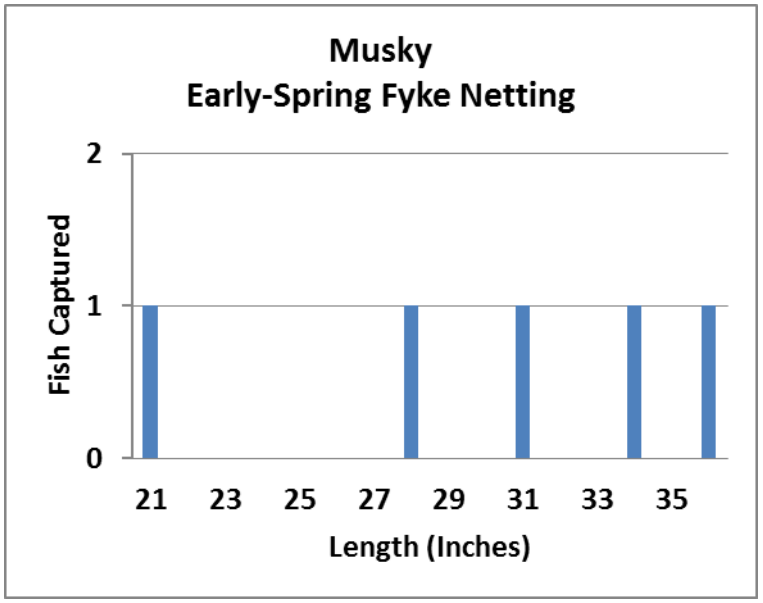
Adult Population Estimate = 1.9/acre	
Quality Size ≥ 15”	80%
Preferred Size ≥ 20”	36%
Memorable Size ≥ 25”	5%



We captured 121 individual walleyes during the early-spring netting and electrofishing surveys at rates of 7.6/net-night and 9.1/mile, respectively. Using mark-recapture techniques, the population estimate for adult walleye in 191-acre Cedar Lake was 361 fish, or 1.9 fish per surface acre of water. The Cedar Lake walleye population is sustained through a combination of natural reproduction and supplemental stocking; and the adult walleye density (1.9 fish per acre) is just below the typical northern Wisconsin range for naturally-reproducing populations (2—5 adults per acre). The size structure of the population is considered good; however, it is indicative of a population that primarily consists of larger, older fish.

Muskellunge

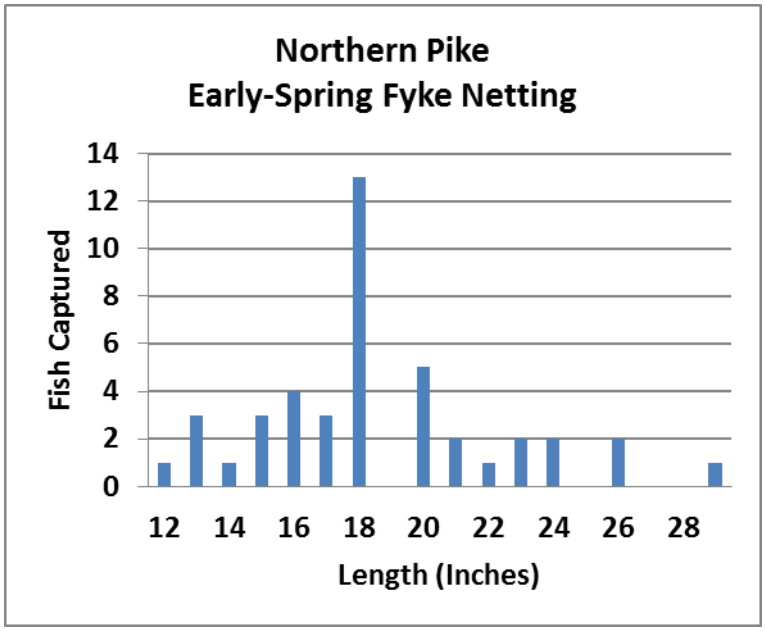
Captured 0.4 per net-night ≥ 20”	
Quality Size ≥ 30”	60%
Preferred Size ≥ 38”	0%
Memorable Size ≥ 42”	0%



Muskellunge were not targeted during the early-spring netting survey (too early for optimal capture rates), but fish ≥ 20 inches were still captured at a low to moderate rate (0.4 per net-night). Although few fish were captured, the size structure of the sample matches our moderate expectations knowing that the fishery is sustained through natural reproduction. Undoubtedly, some larger musky also reside in Cedar Lake.

Northern Pike

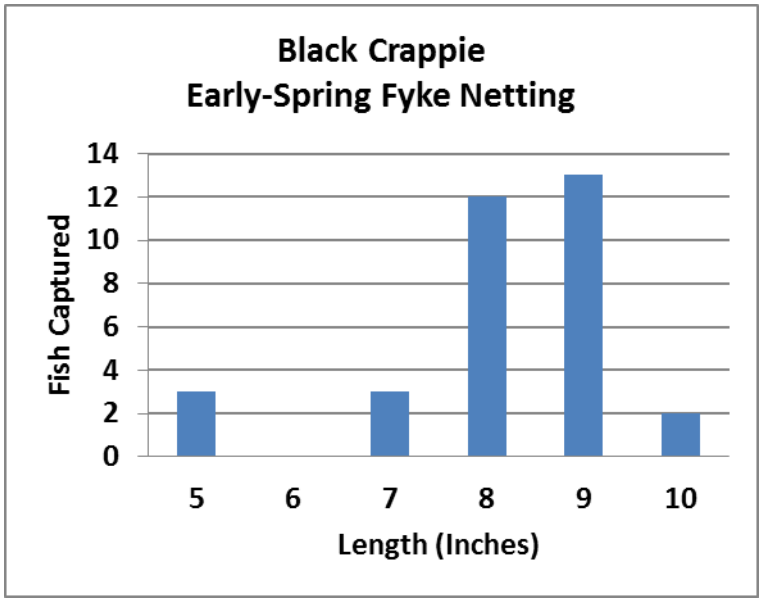
Captured 3.3 per net-night ≥ 14”	
Quality Size ≥ 21”	26%
Preferred Size ≥ 28”	3%



Although our nets were not set specifically to target northern pike, we caught them at a low-to-moderate rate during the early-spring netting survey. Size distribution in our sample was considered fair and is comparable to pike size structure parameters from similar lake-types.

Black Crappie

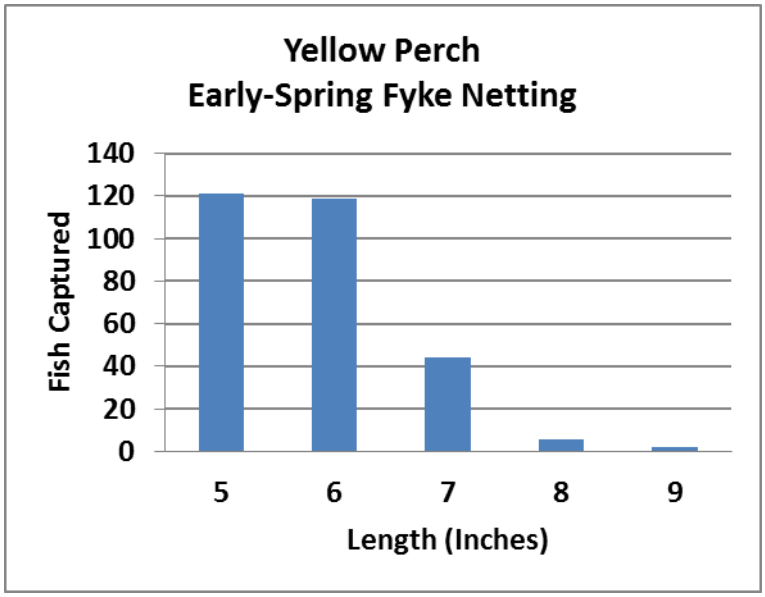
Captured 3.3 per net-night ≥ 5”	
Quality Size ≥ 8”	82%
Preferred Size ≥ 10”	6%



Although our nets didn’t target crappie specifically, early-spring netting can be an effective technique for obtaining a representative sample of the adult crappie population. We caught crappies at a relatively low rate, but the size distribution of our sample reveals there are some crappies in Cedar Lake of an acceptable size to anglers.

Yellow Perch

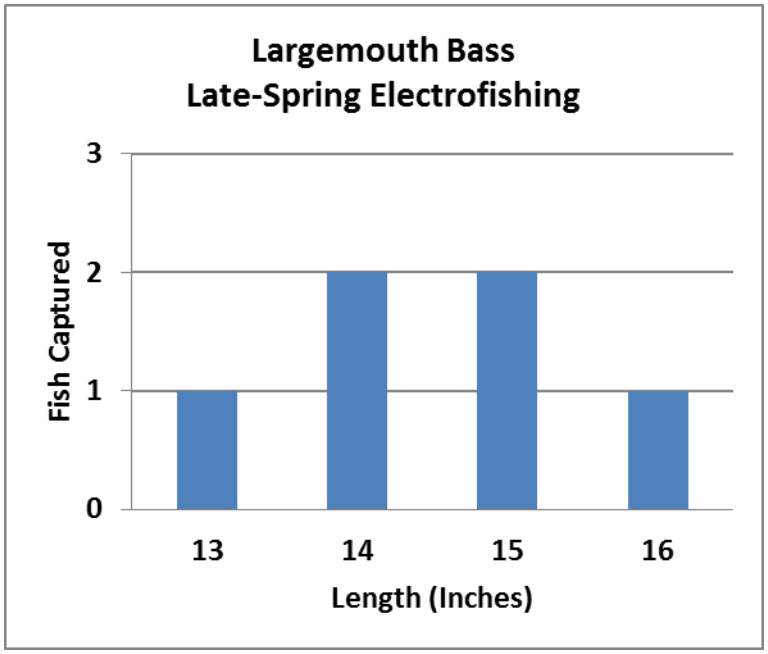
Captured 48 per net-night ≥ 5”	
Quality Size ≥ 8”	3%
Preferred Size ≥ 10”	0%



Yellow perch ≥ 5 inches were captured at a moderately high rate of 48 per net-night during the early-spring fyke netting survey. Size structure of the population sample is considered poor, with a very low proportion of quality-size fish. Unless anglers are uncharacteristically harvesting large numbers of 7-8 inch perch in Cedar Lake, the current size structure may indicate size-selective predation on the largest perch by pike and musky.

Largemouth Bass

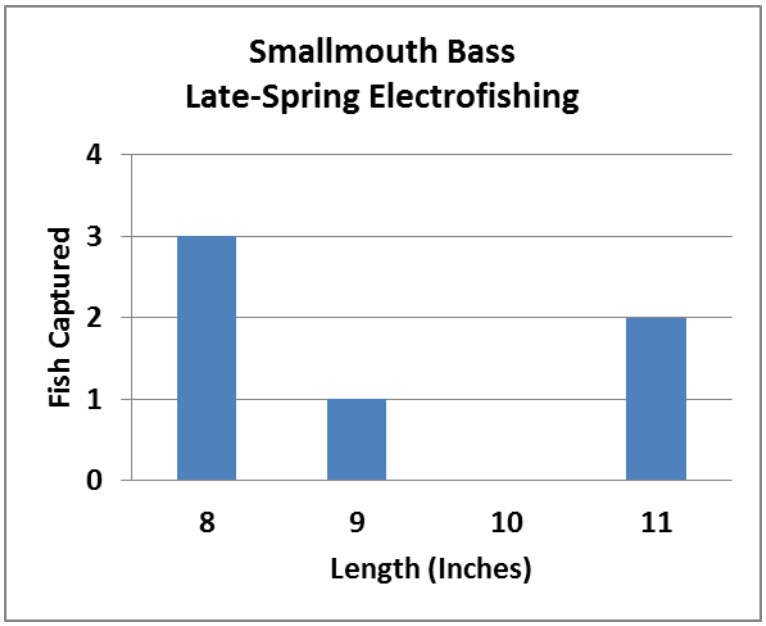
Captured 1.4 per mile ≥ 8”	
Quality Size ≥ 12”	100%
Preferred Size ≥ 15”	50%



Largemouth bass ≥ 8 inches were captured at a low rate of 1.4 per mile during the late-spring electrofishing survey. In support of the late-spring electrofishing catch statistics, just one largemouth bass was caught during the early-summer angling survey.

Smallmouth Bass

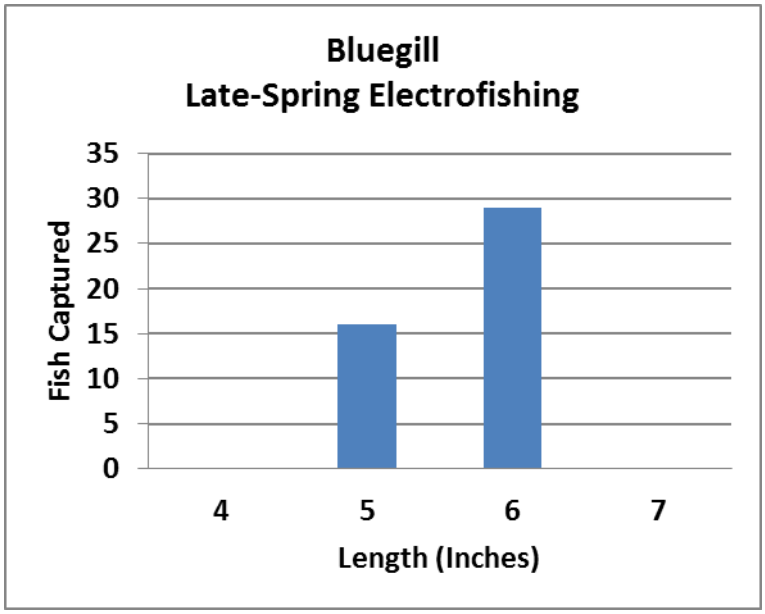
Captured 1.4 per mile ≥ 7”	
Quality Size ≥ 11”	33%
Preferred Size ≥ 14”	0%



Smallmouth bass ≥ 7 inches were captured at a low rate of 1.4 per mile during the late-spring electrofishing survey. In support of the late-spring electrofishing catch statistics, no smallmouth bass were caught during the early-summer angling survey.

Bluegill

Captured 45 per mile ≥ 3”	
Quality Size ≥ 6”	64%
Preferred Size ≥ 8”	0%



Bluegill ≥ 3 inches were captured at a low-to-moderate rate of 45 per mile during the late-spring electrofishing survey. The size distribution of our sample was fair; however no fish exceeded 7 inches in length. It is possible that our survey timing was slightly early and that our sample statistics (catch rate and size distribution) are biased low due to the fact that some bluegills may have not yet entered the shallows (where they are vulnerable to capture by electrofishing).

Conclusions

Cedar Lake contains a relatively healthy fish community and associated fishery. However, it appears that walleye and panfish populations may be enhanced through a minor adjustment. We have proposed that the current walleye regulation at Cedar Lake (no minimum length limit, but only 1 fish over 14 inches may be harvested, 5 fish daily bag limit) revert back to the statewide minimum length limit (15 inches). If approved, this new rule would take effect in spring of 2016.

Historical survey records indicate that the Cedar Lake walleye population had a strong, self-sustaining population. (No stocking occurred between 1970 and 1988, yet 1977 surveys showed a thriving walleye population sustained by natural reproduction). Unfortunately, the walleye population in Cedar Lake has been naturally-reproducing at very low levels for an extended period of time. Therefore, the current walleye regulation, which focuses harvest on smaller, younger fish, is counterproductive to maintaining a density high enough to sustain quality walleye fishing and to reliably control panfish. Because walleyes are occasionally stocked, protecting those fish for several years while they fulfill their intended purposes (e.g., controlling panfish abundances and contributing to the fishable and adult populations). As was the case in the 1977 surveys, which documented “good numbers of large sized individuals” (referring to crappie and bluegill in particular), a higher abundance of walleye may lead to an improvement in the quality of the panfishery as well.

Muskellunge are naturally recruiting in Cedar Lake and have not been stocked since 1995. The survey results presented here are not intended to provide a thorough evaluation of the muskie population. However, in addition to this survey, other recent surveys and angler reports suggest that the Cedar Lake muskellunge population remains healthy and is self-sustaining.

Bass abundances (both largemouth and smallmouth) were found to be quite low in Cedar Lake. We were somewhat concerned that our late-spring electrofishing survey might have been conducted a little early (which might have explained our small sample sizes), so we followed up with an early-summer angling survey for supplemental information on the bass populations. Despite the fact that fish should have been in and around the shallow-water areas, we caught (and observed) only one largemouth bass and no smallmouth bass. This survey provided more evidence that the late-spring electrofishing survey statistics were reliable, and leads us to conclude that bass numbers are indeed low in Cedar Lake when considering the available habitat.

Panfish capture rates were by no means high in Cedar Lake, but sizes of panfish were less than satisfactory. Growth rate information was not available at the time of this summary, but past panfish growth statistics in Cedar Lake suggest that relatively slow growth rates may be a contributing factor into the poor panfish size distributions. As mentioned above, a stronger predator population (which may be possible if the proposed walleye regulation change is approved) should promote increased panfish quality.

Rock bass, black bullhead, shorthead redhorse, and white sucker were other species captured during our surveys.

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